

## **Exhibit D**



**Treatment of MTBE in Selected Wells  
In City of New York v. Amerada Hess Corp. et al.**

**Expert Report of David W. Hand, Ph.D.**

In the matter of:

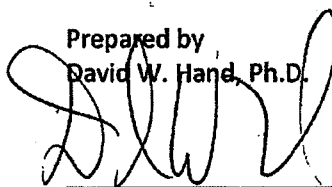
City of New York  
Plaintiffs

MDL No. 1358

Amerada Hess Corp., et al.  
Defendants

March 9, 2009

Prepared by  
David W. Hand, Ph.D.

 03/09/2009

**DEFENDANT'S  
EXHIBIT**  
D-12604

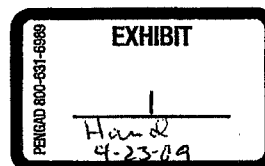


Table 10. - Annual Operating and Maintenance Costs in 2009 dollars for Alternative 1A.

Item Description	Unit	Quantity	Unit Cost (\$)	Total Cost (\$)
<b>GAC Cost</b>				
GAC used in Years 2016-2025	-	1,420,000	1.85	2,627,000
GAC used in Years 2026-2035	-	1,480,000	1.85	2,738,000
GAC used in Years 2036-2045		940,000	1.85	1,739,000
GAC used in Years 2046-2055		580,000	1.85	1,073,000
<b>Total GAC Cost over 40 years</b>				<b>8,177,000</b>
<b>Annual GAC usage costs</b>				<b>204,000</b>
Blower Operating in Years 2016-2025	-	-	-	140,000
Blower Operating in Years 2026-2035	-	-	-	140,000
Blower Operating in Years 2036-2045	-	-	-	105,000
Blower Operating in Years 2046-2055	-	-	-	87,000
<b>Total Blower Operating Costs over 40 years</b>				<b>472,000</b>
<b>Annual Blower Operating Costs</b>				<b>12,000</b>
Off-Gas Heating Costs in Years 2016-2025	-	-	-	164,000
Off-Gas Heating Costs in Years 2026-2035	-	-	-	164,000
Off-Gas Heating Costs in Years 2036-2045	-	-	-	120,000
Off-Gas Heating Costs in Years 2046-2055	-	-	-	88,000
<b>Total Off-Gas Heating Costs over 40 years</b>				<b>536,000</b>
<b>Annual Off-Gas Heating Costs</b>				<b>13,000</b>
Gas-Phase MTBE Sampling Costs/yr (combined inf., stack, inf., eff.)	Ea.	48	200	10,000
Liquid-Phase MTBE Sampling Costs/yr (Sampling twice weekly blended Inf & Eff.)	Ea.	104	200	21,000
<b>Total MTBE Sampling Costs 2016 - 2055</b>				<b>1,240,000</b>
<b>Annual MTBE Sampling Costs</b>				<b>31,000</b>
Annual Labor Costs (\$40 Operations Staff, \$ 55 Supervisor) <sup>1</sup>	-	-	-	15,000
<b>Total Labor Costs per yr.</b>				<b>15,000</b>
<b>Total Labor Cost over 40 yrs</b>				<b>600,000</b>
<b>Total Annual Operating Costs</b>				<b>207,400</b>
<b>Total Costs over 40 years</b>				<b>11,025,000</b>

<sup>1</sup>Source: NYC Office of Management and Budget; Includes fringe benefits and overtime. Cost for plant operators, janitorial, and mechanical staffing. Assumes routine maintenance of GAC units and VOC sampling time and time required for change-out of 4 hrs. . Time required for change-out 4 hrs 1 staff, time required for sampling 2 hr per sampling period 1 staff, time required for maintenance 40 hrs per year 1 staff, 2 hr per week supervisor for overseeing operation and data analysis. (4x3x40 + 2x2x40x52+3x40 = 8,920; 2x52x55 = 5,720)  
Estimates are based on a conceptual stage with a 1 to 15 % project definition.  
Estimates are typically accurate to ± 50 %.